ADJUSTABLE KEYBOARD

FIELD OF THE INVENTION

This invention relates to an adjustable keyboard and, more particularly, to an adjustable keyboard having a separable pivot connection between two separate segments or sections of the keyboard.

BACKGROUND OF THE INVENTION

Various arrangements of keyboards to permit variable positioning of a user's hands have previously been suggested. These include the keyboards disclosed in the international PCT application of Goldstein (international publication number WO 92/00851) and U.S. Pat. Nos. 4,597,681 to Hodges, 5,067,834 to Szmanda et al, 5,122,786 to Rader, and 5,228,791 to Fort, for example.

The aforesaid Goldstein application discloses a keyboard having two segments or sections of different sizes connected to each other at their upper ends by a hinge, which may be a ball and socket joint. The aforesaid Goldstein application lacks any suggestion of holding the two segments in their adjusted positions when connected to each other. The aforesaid Goldstein application also has no teaching of holding the two segments, when detached from each other, at different positions with respect to a support surface such as a desk top, for example. The aforesaid Goldstein application has its space bar on its right segment terminate at the location of the character N key. A touch typist normally uses the thumb of the right hand to actuate the space bar, and the locations of the fingers of the right hand result in the thumb engaging the space bar to the left of the character N key. Thus, the right segment of the aforesaid Goldstein application would require a touch typist to change the way the space bar is struck or have difficulty in striking it.

The aforesaid Hodges patent requires a pair of base plates to be hingedly attached to each other with each of the base plates having a keyboard section pivotally connected thereto. This is a complicated arrangement that significantly increases the cost. The two sections also are not separable from each other so that-the amount of relative movement between the two sections is significantly limited. Additionally, the right keyboard section does not have the space bar extending beyond the character N key in the same manner as the aforesaid Goldstein application.

The aforesaid Szmanda et al patent has a keyboard formed of two segments connected at their upper ends by a ball and socket connector and each of its segments supported on a telescoping support, which is universally connected by a ball and socket joint to a sliding attachment unit. This arrangement is both complicated and expensive. Furthermore, the space bar appears to terminate beneath the character N key. Additionally, the keys appear to have a rectangular configuration rather than having a standard keyboard arrangement in which keys in adjacent rows do not vertically align but are slightly shifted or staggered. This presents the problem to a touch typist of not being able to reach the keys properly because of the shifting of their positions from the standard keyboard arrangement.

The aforesaid Rader patent discloses two keypads with one being substantially larger than the other. The two keypads, which are mounted on separate support posts, also may be hingedly connected to each other. The aforesaid Rader patent does not have a standard keyboard arrangement or a standard space bar.

The Fort patent has a keyboard formed of two segments with each segment being separately mounted on a support through a ball and socket joint. The right segment of the keyboard has a space bar positioned to extend beyond the character N key. However, a separate support for the two joints is required to enable the two segments to be disposed adjacent each other. This is a relatively expensive keyboard.

SUMMARY OF THE INVENTION

The present invention satisfactorily solves the foregoing problems through having a keyboard formed of two segments or sections in which the two segments can be rotated a maximum of 90° from each other in a horizontal (X–Y) plane, which is the plane of a support surface for the keyboard. In one embodiment, the two segments of the keyboard are locked in any position to which they are moved through a connector. In this embodiment, the connector is formed so that each of the two segments also can be tilted a maximum of 45° relative to the support surface in a vertical plane, which is perpendicular to the plane of the support surface.

The connector of the present invention also enables the separation of the two keyboard segments. Of course, the two segments can be held adjacent each other by the connector to form a standard keyboard arrangement.

Another embodiment has a connector in which the two segments are not locked to each other. This connector permits separation of the two segments while allowing movement of the two segments to change their slope and tilt angles.

Each of the two keyboard segments also has three pivotally mounted supports on its bottom. These supports enable each of the segments to be supported at different slope (front to rear) and tilt (right to left for left segment and left to right for right segment) angles with respect to the support surface.

The pivotally mounted supports have two pivotally mounted legs of different lengths. One embodiment has an extension on the longer leg to provide for larger slope and tilt angles.

The two keyboard segments also are shaped so that the right hand segment has its space bar extending to the left beyond the character N key. Therefore, a touch typist can activate the space bar without any change in technique.

An object of this invention is to provide a keyboard having two segments or sections with each being movable to various positions while connected to the other and being capable of being separated from each other and movable to various positions independently of the other.

Another object of this invention is to provide keyboard segments having supports for supporting each segment or section at desired slope and tilt angle positions, particularly when separated from each other but also when connected to each other.

A further object of this invention is to provide a keyboard having two segments or sections connected to each other by a connector allowing movement of each segment or section relative to the other in two substantially perpendicular planes while retaining the two segments in any position to which each is moved.

Still another object of this invention is to provide a connector having a first portion that may be deployed in a different position relative to a second portion to increase the torque for locking the two keyboard segments in their desired positions.